

## ACCOUNTING FOR THE COMPLEXITY OF GLOBALIZATION: “RHIZOME”, SYSTEMS, HISTORY, AND SELF-ORGANIZATION

The scholars discussing globalization mostly agree that it constitutes an extremely complex phenomenon. The character and the extent of this complexity have become the subject of intensive research and heated debates in the humanities and in parallel sciences. Some scholars conceptualize globalization as a relation between the global flows of capital and goods, others emphasize the relation between the shifts of capital and the translocation of people or between the migration of people and the dissemination of information through the electronic media. A review of research conducted in this area by scholars recruiting from quite disparate disciplines, representing various theoretical perspectives and methodological approaches, allows one to reconstruct, at least partly, the multitude of processes, phenomena and dependencies which make up what is called globalization.

Jan Aart Scholte presents the interconnections occurring between the global capital and global cyberspace. Saskia Sassen explains the relationship between global metropolises, cyberspace and the global capital. The mutual relation between the global capital and human migrations is the main focus of research carried out by Majid Tehranian. Our list of global interconnections is growing, yet still we can go on enumerating other fields of research, binding them in the following pairs: global metropolises — migrations (Peter van der Veer), cyberspace — migrations (Arjun Appadurai), cyberspace — global market (Thomas Friedman), the global capital — the global market (Pankaj Ghemawat), the global market — metropolises (Ulf Hannerz), the global market — migrations (Kazimierz Kuciński), the global capital — the institution of state (Ulrich Beck), the state — migrations (Michael Bommes), the state and the global market (Michael Porter), the global capital and the global center, the center and the cultural processes of transculturality, cosmopolitanism, creolization and hybridization (Ulf Hannerz), the processes of transculturality and cyberspace (Thomas Hylland Eriksen), transculturality and

the global capital, (Leslie Sklair), transculturality and the global metropolises (Constance Sutton), transculturality — migrations (Marta Widy-Behiesse), transculturality and the global market (Gordon Mathews), transculturality and various forms of fundamentalism occurring in different parts of the world and in some cases taking the form of global phenomena (Jonathan Friedman), the global market and fundamentalism (Benjamin Barber), the global capital and various types of social stratification, disempowerment and exclusion in different societies (Michelle Bata and Albert Bergesen), social segmentation and the global cyberspace (Jerry Everard), social segmentation and the global market (Richard Sennett), the global market and global money (Giovanni Arrighi).

The above review is naturally limited only to a selected number of scholars and ideas. Most likely, it does not capture all the essential phenomena of global interconnections that make up globalization. However, it gives us some orientation in how complex a phenomenon globalization is. The mentioned interconnections and interdependencies build up longer chains of connection, for example: the global capital — the cyberspace — metropolises — migrations — the global market. The construction of these chains is rhizomatic, to use Gilles Deleuze's and Felix Guattari's (1987) word for an entity or a model which, unlike "arborescent" forms, cuts across boundaries imposed by vertical lines of hierarchies, genealogies and order and forms rhizomes with something else — beings that "are not amenable to any structural or generative model" (Deleuze, Guattari 1987, 12): "Any point of a rhizome — argue the authors of *The Thousand Plateaus* — can be connected to anything other, and must be. This is very different from the tree or root, which plots a point, fixes an order. [...] A rhizome ceaselessly establishes connections between semiotic chains, organizations of power, and circumstances relative to the arts, sciences, and social struggles" (7).

The chains act in like manner: they bifurcate endlessly, moving in many directions, crisscrossing and connecting to other chains and thus establishing complex networks of relations between manifold global phenomena.

It is important not to neglect one distinctive dimension of the complexity discussed here. The relation between two or more global phenomena usually has a character of an active, dynamic interaction stimulated by impacts of different form and meaning: unilateral, bilateral, strengthening, conflictual; the list goes on. The complexity of globalization is thus better to be conceived as having a character of a network. This network is formed as a result of different global processes and phenomena entering mutual relations.

The latest studies of globalization focus on the relations between global contemporaneity and the past. In this area of study we can speak of two main intellectual currents. Within the first one, scholars compare contemporary globalization with similar, as they believe, phenomena that had taken place in the past. They point at different periods of globalization and distinguish between them by way of analyzing their similarities and differences. Hugel (1993) has revealed the nineteenth century globalization of technical inventions, Ferguson (2003) has analyzed the globalization of British Empire. O'Rourke and Williamson (1999) have written on the globalization of the Atlantic economy, while Wolf (1982) has pointed to the same process concerning the Western capitalism. In this way, the phenomenon of sixteenth century globalization of European merchandise and capital as facilitated by geographical discoveries and the colonial expansion of Western countries (Osterhammel, Petersson 2005; Wallerstein, 2004; Braudel, 1979) has become increasingly clear.

The second current represents a different perspective. Scholars focus here on analyzing the history of contemporary global phenomena. They study the processes and mechanisms which have led to presently observed globalization or underlay various globalizations and world systems of different epochs. The example of such an approach can be found in the works of Andre Gunder Frank (1998), Janet Abu-Lughod (1991) and Giovanni Arrighi (2002) and also in collective works under significant titles, such as *The World System. Five Hundred Years Or Five Thousand?* (Frank, Gills, 2006) and *Globalization and Global History* (Gills, Thompson, 2006).

The research carried out within both currents concludes that globalization is not only the feature and product of the present time, but it also has a history of its own. Venturing into this history gives us an opportunity to better understand globalizations, systems, processes and global phenomena of different epochs and relations between them. One is led to conclude that what is observed as contemporary globalization would not be possible if it had not been for the globalization(s) dating back to the nineteenth century which itself could only have occurred as results of the globalization(s) that had preceded it in the sixteenth century. What accompanies these dependencies is changes and transformations which allow to distinguish globalizations taking place in different epochs. According to Abu-Lughod (1991, 364), "The World System A.D. 1250-1350" sharply contrasts with the one which the Europeans have been building since the sixteenth century. The former one

was limited to Euro-Afro-Asian cultural ecumene of the Old World with the crucial role of the Indian Ocean. It was characterized by a polycentric structure and based on the relations between the world of Islam, India, China and other regions of the world that then was. Now, the system built by the Europeans could be specified by features such as the inclusion of the old world of America, the essential role of the Pacific Ocean and the existence of one, global center whose role was subsequently assumed by global super-powers such as Spain, the Netherlands, Great Britain and The United States of America. Abu-Lughod also argues that at present we can observe the rise of a new global order characterized by a growing importance of the Pacific Ocean and the accompanying role of the Far East countries, including the Republic of China.

According to the author, we are in need of formulating a systemic theory that would be able to account not only for the persistence of the global system, but also for its change and changeability: its capacity to transform into another global system. The point of departure of this future theory could be the following two assumptions: „first, the principles of organization of world systems can have considerable variability; and second, world systems are dynamic and therefore undergo periodic restructuring” (Abu-Lughod, 1991, 364). What should serve as a basis of this conception is the idea of self-organization of culture: “The reason it is important to recognize the variability of system-organizational principles is that, by definition, living systems are dynamic. They reorganize as the principles change” (1991, 365). In this way the systemic conception of self-organization postulated by Abu-Lughod can encompass globalizations, global systems, processes and phenomena of different epochs. It might explain the transformations of some of them into the other and clarify more than just the relations occurring between subsequent global phenomena; it should also provide us with an accurate explanation of the interconnections between the global phenomena that co-exist beside one another and constitute the global order of a given epoch. The primal aim of this new conception would be to reveal the complexity of globalization in its two basic dimensions: synchronic and diachronic and allow us to illuminate the complexity of the history and of the contemporaneity of globalization.

In order to build a systemic conception of globalization one can also seek theoretical support in Edgar Morin’s (1973) idea of self-organization whose aim was to explain the process of a widely understood anthropogenesis. As Morin himself admitted, he used the

works of mathematicians, physicists and programists who studied “self-organizing systems”. For example, of great interest was to him Heinz von Foerster’s conception of “order from noise” (1962). For Morin, self-organization is the mutual influence of different processes being also the cause of their transformations. For example, the changes occurring in the anatomy of humans, in his/her behavior, in social structure and communication, in the products of the material and spiritual culture and in the natural environment interact and influence each other, creating a complex network of interactions. What undergoes transformation here, is not only the processes involved, but also the very structure and the rules of the interaction.

According to this view, one should not ascribe the nature of anthropogenesis to a specific phenomenon, e.g. to anatomic, environmental or social change, but rather seek it in a complex interaction constituted by many different phenomena interconnected by many different mutual influences. The systemic perspective of self-organization based on the indications of Abu-Lughod’s and the conception of Edgar Morin allows one to make quite similar observations concerning globalization. Most importantly, contrary to many theories, studies, conceptions and schools of thinking, let us emphasize once again that globalization does not amount to some easily distinguishable processes, phenomena or mechanisms. What is essential is rather to envisage it as a complex interaction occurring between many global ecological, technological, economical, social, political and cultural phenomena. The intricate dependencies observable in this interaction bind together various processes and phenomena which are taking place in different parts of the world and which had been at work in the history of civilization.

The perspective of self-organization also enables an analysis of globalization in its synchronic and diachronic dimension. To think of globalization synchronically means to assume that the network of relations between global phenomena is of a self-organizing type. Following this premise, we should concentrate in our studies on the very problem of interaction. It leads — as it was argued before — both to the transformation of phenomena between which it occurs and to the transformation of the structure and the rules of the interaction. The interactions between pairs of phenomena such as: global metropolises — migrations; cyberspace — migrations, cyberspace — global market and so on abound in numerous influences based on different types of feedback loops. These mutual influences can be compared to the meshes in a fisherman’s net: they are all little parts of

a wider, much more composite network of elements — in our context the elements being simply further interactions — in which what happens between some parts of the structure exerts a direct or indirect influence on the relations between other phenomena. To give a basic example: the global capital existing on and thanks to the global market through the investments made in global metropolises attracts migrants from different parts of the world and through their actions becomes the reason for manifold transformations taking place in the countries they originate from. Thanks to these relations, we can observe the ways in which the metropolis influences the periphery, the periphery influences the metropolis and also how metropolises interact with each other and how the peripheries, stimulated by the metropolises, exert influence on one another. The processes under way can also be triggered by fluctuations. By fluctuation we mean an unpredictable local event or actions of particular people. In this case what first seemed a local change — reinforced repeatedly by the network of influence between different global phenomena — contributes to transformations of these phenomena or even the whole structure of the interaction.

The perspective of self-organization proves helpful in understanding the dialectics of relations between global phenomena of different epochs, when significant and radical changes are accompanied by a stable continuity of interconnections. Globalization scholars such as Arjun Appadurai (1996), Ulrich Beck (2002) and Anthony Giddens (1991) emphasize the fundamental dissimilarity of the contemporary globalization from the phenomena observed in the past. Interestingly, other scholars convincingly argue that “globalization is not a new phenomenon” (O’Rourke, Williamson, 1999). Now assuming the perspective of self-organization enables one to acknowledge arguments of both parties of the controversy: as a result of ceaselessly occurring transformations, the global contemporaneity represents something new and quite distinct from the past. In order to account for this novelty Arjun Appadurai came up with the conception of rapture (1996). Either way, it would be hard to concur the argument that the present globalization and the phenomena that constitute it would not have ever taken place if it had not been preceded by the global phenomena occurring in the past and interacting with each other.

Now what is also worth stressing is that the relations between certain phenomena and processes in different epochs bring to light an asymmetry which can be described as irreversibility. We speak of irreversibility when the phenomena which had occurred earlier

enable the occurrence of later ones, contribute to their appearance and influence their character. Obviously, we cannot observe the reverse dependency. Having said that, however, we still do not explain the whole meaning of irreversibility. What is at issue here is that the changes taking place in some location, even if they are not to last long, often hinder the return to the former state (the status-quo) and it is also in this meaning that we can speak of irreversibility. The colonial empires are long gone now, yet the changes entailed by their existence are irreversible. The European colonies grew and produced comestible and industrial plants for the global market. The traditional modes of production oriented only to satisfy the needs of smaller communities and to supply local markets were in this way destroyed. Today, although we all speak of a postcolonial era, the agricultural producers living in the developing countries remain totally dependent on the prices of coffee, sugar, rice, corn, bananas or wool which fluctuate accordingly to the changes in supply and demand of the global market. Another example of further dependencies is migrations: the city of Paris attracts the inhabitants of former French colonies, the same way London does. The newcomers from the former Portuguese colonies in Africa and Asia can be met in Portugal and in Brazil. The perspective of self-organization helps us to understand that between the contemporary global phenomena and the ones witnessed in the past there may exist significant differences and at the same time they may be strictly related to one another. The contemporary cyberspace of connections between the Internet, satellite television and cell phones is something radically novel in many respects. But still, it would not have ever come into being if it had not been for the formerly globalized network of cable telephony which had replaced the global telegraphic network preceding it. The dialectics of the continuity of transformations is an inseparable feature of the process of self-organization.

So far, the systemic conceptions of globalization have mainly focused on analyzing the synchronic chains of dependencies. This regards also Immanuel Wallerstein's (2004) much celebrated conception of the world-system. Wallerstein describes the emergence of the capitalist world-system in the sixteenth century Europe and shows how it has proliferated globally, continuing to the present day. What is worth noticing, is that regardless of the idea of proliferation, Wallerstein's theory has to assume the invariability or, in other words, the constancy of certain basic features, structures, mechanisms and regularities which characterize this world-system. The perspective of self-organization once again proves useful in regarding

globalization and the global phenomena that constitute it in terms of historical processes of transformation during which relevant elements of the whole network also undergo profound changes. Consequently, instead of a world-system with invariant properties, we receive a picture of capitalism as a historical process subject to many transformations which change its character and its global role along with the modes and forms of its accumulation: from mercantile capitalism (Braudel, 1979), through production capitalism (Marx, 1959), right to production-commerce-service capitalism of modern global corporations (Beck, 2002).

Thinking globalization in terms of a self-organizing process of constructing a world socio-economic community provides tools which may prove effective in solving some of the controversies debated in most recent studies, the most prominent amongst them being the dispute over the novelty or historicity of globalization. Needless to say, the approach discussed here enables posing questions for further research in the said area. Both in the case of our contemporaneity and of different periods of the past there arises a question: what global phenomena and what relations between them are to be deemed crucial for the formation, continuation and transformation of the respective global orders, structures and systems.

Clearly, to answer all these questions requires from us extended research in phenomena of both general and particular, if not unique, character both with regard to the present time and to the cultural past. Human knowledge confronts here two main obstacles of different kind. Firstly, the nature of many global issues requires further investigation. Secondly, despite the growing knowledge of phenomena under study, we still cannot understand the relations between them in all their “rhizomatic” — as Deleuze and Guattari would have it — complexity. In the first case, the problem is lack of knowledge, in the second one — its surplus, simply.

We believe that the idea of self-organization — utilizing and developing the conceptions of dynamic systems that are open, instable, based on the appreciation of unpredictable and irreversible nonlinear processes of different feedback loops — does offer some new possibilities of research and knowledge in globalization studies. These possibilities may be much wider than the ones offered by systemic conceptions of globalization based on outdated models of homeostatic systems. Naturally, the perspective of self-organization cannot replace empirical studies we are all in urgent need of, yet it will most certainly provide us with effective tools for the analysis of our growing knowledge.

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